Agri Files

128 of 1911-12

Sl. No. 1

Opening of an Agricultural School at Bangalore

1911-12.

FILE No. 128 OF 1911-12.

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

PROCEEDINGS OF THE GENERAL AND REVENUE DEPARTMENT.

(REVENUE—AGRICULTURE.)

"A" Collection: Serial No. 1.

MAY 1912.

Opening of an Agricultural School at Bangalore.

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1	To Dr. Coleman, the Comptroller to Government, the Revenue Commissioner in Mysore, the other Heads of Departments and the Deputy Commissioners of Districts. Government Order No. R. 6368-409—Agri. 128-11-1, dated the 6th May 1912. Approves of the proposals of Dr. Coleman for opening on Agricultural School at Bangalore.		11-12

1911-12.

GENERAL AND REVENUE SECRETARIAT.

(AGRICULTURE.)

NOTES.

FILE No. 128 OF 1911.

OPENING OF AN AGRICULTURAL SCHOOL AT BANGALORE.

A. Demi-official letter No. 386, dated 1st November 1910, from Dr. L. C. Coleman, to the 2nd Councillor.

Submits a plan of Agricultural study that might be suitable for Mysore.

B. Demi-official letter dated 5th November 1910, from the 2nd Councillor to Dr. L. C. Coleman.

Calls for information as to the location of and the accommodation for the Agricultural School, and as to the teaching staff.

C. Demi-official letter dated 9th November 1910, from Dr. L. C. Coleman, to the 2nd Councillor.

Furnishes the information called for in B.

D. Demi-official letter No. 567, dated 29th December 1910, from Dr. L. C. Coleman, to the 2nd Councillor.

Furnishes a rough estimate of the cost of starting an Agricultural School in the State.

1. The letters in the file relate to the subject of opening an Agricultural School in Bangalore. I need not say anything to commend the measure. It is not likely that our students can find admission easily outside. The sooner we have our own school the better. In accordance with the Dewan's suggestion made some months ago, I entered into correspondence with Dr. Coleman and had two or three personal interviews with him. His estimate is a modest and reasonable one.

2. I have not yet seen the official letter referred to by Dr. Coleman concerning the fitting out of the Hebbal Farm. It will come up in due course, I believe, after the Comptroller's opinion is received. This proposal may also be taken into consideration early and disposed of, so that we may be able to start the school soon.

H. V. NANJUNDAYYA.
5-1-11.

E. Demi-official letter No. 838, dated 16th March 1911, from Dr. L. C. Coleman, to the 2nd Councillor.

Submits a note on his visit to the various Agricultural Colleges in India with further information in regard to the opening of an Agricultural School in the State.

3. The other papers were sent up some time ago. The subject may be taken up and some decision arrived at soon. I would suggest the consideration of it at an early meeting before the budget.

H. V. NANJUNDAYYA.
26-3-1911.

4. Ordered by the Dewan to be circulated to Councillors and brought up at a Council Meeting.

K. MATTHAN.
30-3-1911.

5. Circulate and note for meeting.

C. S. BALASUNDARAM IYER.
1-4-1911.

6. Seen.

K. P. PUTTANNA CHETTY.
4-4-11.

H. V. NANJUNDAYYA.
4-4-11.

Secretary's note on letter No. 2164, dated 10th April 1911, from the First Assistant to the Hon'ble the Resident in Mysore, forwarding a copy of the Madras Government Order No. 953—Rev., dated 1st April 1911, directing that students from Native States admitted to the Coimbatore Agricultural College, be charged a fee of Rs. 240 per annum for education and lodging (Education File No. 358-10-1).

7. The College is maintained by the Madras Government and it is apparently the intention of that Government to confine the free benefits of the institution only to the taxpayers who contribute to its up-keep. It is therefore ruled that students from Native States should pay a fee of Rs. 240 a year (subject to enhancement) for tuition and lodging. In every case the students pay for their board.

8. The decision of the Madras Government might be communicated to the Inspector-General of Education and an order published in the Gazette for general information.

C. S. BALASUNDARAM IYER.
1-5-11.

9. Yes.

10. This proves the urgent need for an Agricultural School here. I think we should push the scheme through so as to open at least from January next.

H. V. NANJUNDAYYA.
2-5-11.

Submitted to His Highness.

No. 2138, dated 28th June 1911.

11. I submit for information Residency letter dated 10th April, forwarding a copy of the Proceedings of the Government of Madras dated 1st idem, directing that students admitted to the Agricultural College, Coimbatore, from Native States should, for the present, be charged a fee of Rs. 240 per annum for education and lodging, and that this fee is liable to be enhanced.

12. This will be communicated to the Inspector-General of Education and an order will also be published in the Gazette for general information.

13. Taken in connection with another order of the Madras Government to the effect that, even so, local candidates for admission into the Agricultural College will have preference over outsiders and that the latter could be admitted only if space permitted, points, as observed by the 2nd Councillor, to the necessity for the Mysore State starting a similar institution of its own at an early date.

T. ANANDA ROW.
28-6-1911.

D. O. letter No. 3, dated Mysore, the 1st July 1911, from R. H. Campbell, Esq., I.C.S., Private Secretary to His Highness the Maharaja of Mysore, to the Dewan of Mysore.

14. "With reference to the 2nd Councillor's remark on File No. 2138, dated 28th June 1911, I am directed to say that His Highness entirely agrees as to the urgent necessity of starting an Agricultural School of our own for Mysore students. The subject may be taken up at once and treated as urgent. The file is returned herewith."

15. To 2nd Councillor with compliments.

T. ANANDA ROW.
5-7-11.

16. Submitted to 2nd Councillor with reference to the latter portion of Mr. Campbell's letter.

17. I understand that the office has no papers on the subject of an Agricultural School. Perhaps the 2nd Councillor has received proposals demi-officially from Dr. Coleman.

C. S. BALASUNDARAM IYER.
7-8-11.

18. If the proposals contained in Dr. Coleman's letters (which are given in sufficient detail to start with) are sanctioned by Government arrangements can be made to begin work in March or April next, if not in January. The amount required for the part of this year may be given as an additional grant.

19. The Secretary will kindly get a statement put up to show what the proposals are and the cost for the first year.

H. V. NANJUNDAYYA.
12-8-11.

20. *Assistant Secretary, Branch IV, Education*—Kindly attend to this please.

C. S. BALASUNDARAM IYER.
12-8-11.

21. Statement put up.

B. NARAINSWAMI IYENGAR.
18-8-11.

Statement of prcposals submitted by Dr. Coleman for establishing an Agricultural College in Mysore and of the cost therefor for first year.

A. Statement of proposals.—

1. Entrance requirements.—

I the College is intended primarily to train the sons of land-holders to work their own land and not to train men for Government service, the entrance requirements should be somewhat between the Matriculation and the Lower Secondary standard which is sufficiently low and which would yet ensure a fairly good knowledge of English.

2. Course.—

For the present a two years' course would be sufficient, the subjects taught being distributed as follows:—

1st year.—

(1) Practical Agriculture.—Actual agricultural operations to be carried out by the students on the farm throughout the year.

(2) Elements of Agriculture.—Elementary lectures to be given during 2nd term.

(3) Elementary Chemistry.—Practical and theoretical dealing with (*a*) the common elements especially those that enter into the composition of plant and animal tissue, (*b*) organic and inorganic compounds.

(4) Botany.— Elementary study of plant forms leading up to Economic Botany and Mycology.

(5) Zoology.— Elementary study of animal forms leading up to Entomology and Veterinary Science.

2nd year.—

(1) Practical Agriculture.—Each student to manage a plot of land and perform all operations of preparing soil, sowing, cultivation and harvesting, record of operations, expenses and profits to be kept.

(2) Theoretical Agriculture.—Cultivation of crops with a special reference to those grown in Mysore.

(3) Economic botany.—Study of the chief economic plants of the State, elements of plant breeding, theoretical and practical.

(4) Mycology.—The diseases of plants in Mysore, their causes and prevention, theoretical and practical.

(5) Entomology.—Insect pests of Mysore, practical work in observing and rearing insects.

(6) Veterinary science.—Breeding and care of cattle, etc., diseases and their prevention.

Dr. Coleman is, however, of opinion that the two years' course would not be sufficient as the entrance requirements are proposed to be low and the progress of the student would necessarily be slow in the first year as he would take considerable time to grasp complicated subjects presented in a language not his own.

3. Selection of instructors and the establishment required.—

In the selection of instructors, a course in the vernacular for the sons of raiyats to be undertaken after a proper agricultural course is organised should also be kept in view, proper elementary text-books in the vernacular being prepared in the meantime. Suitable instructors being selected, it may then be possible to choose out of them such men as may be fitted to carry out the above work. As for the establishment Dr. Coleman is of opinion that the teaching should not be left wholly to subordinate or junior members of the staff. When the two men now under going training in Agriculture and Agricultural chemistry in England return, their services should also be utilized for some of the teaching work. As to the Biological side Dr. Coleman states that he cannot say much partly owing to the uncertain tenure of his own office. For the teaching in Veterinary science, the services of Mr. Simpson or Mr. Narasimha Iyengar may possibly be got for one hour a day or less. Some Assistants would also be necessary to use some of them at least as instructors so that both Teaching and Research work may be carried on satisfactorily at the same time. The increase in staff that is considered necessary is as follows.—

1. Assistant in Mycology,
2. „ Botany,
3. „ Entomology,
4. „ Charge of Insectary,
5. „ Chemistry,
6. Assistant Farm Manager.

The above increase will ensure the presence of an Assistant in each branch permanently at headquarters to look after long continued experiments which at present cannot be carried out as both Dr. Coleman and his Assistants have to spend a great part of the year on tour.

The menial staff also requires strengthening.

4. College building and Students' quarters.—As a temporary measure the following plan is proposed.—All training and lecturing in Botany, Zoology and Chemistry can be done in the present building according to the plan put up. Two rooms marked A & B in the plan are available and they are at present being used as Assay and store rooms, respectively. By suitable adjustment room A may be converted into a Chemical laboratory and room B turned into a combined lecture hall and Botanical and Zoological laboratory. Room A will accommodate 19 or 20 students and room B, from 15 to 17 students. Thus all training and lecturing in Botany, Zoology and Chemistry can be done in the present building. This work should be confined to three days in the week during the first year. The students should be quartered at the farm and should receive all agricultural training there. The lectures in agriculture can be given in the room now used by the farm manager as an office and can be easily fitted up. Arrangements have to be made with regard to housing the students and providing for cooking and messing accommodations. If the manager of the farm were provided with quarters the cooly lines he is at present using as a dwelling could be utilized temporarily as quarters for students. Whatever arrangement is made some sort of tiffin room would have to be erected either at the farm or at the laboratory. Thus under this arrangement on the days on which they have actual manual labour to perform they would have no tiring journey to make. In any case some sort of transport would be necessary for them on the days on which they have to come to Bangalore for practical work. Three pairs of bullocks and 3 of Col. Jones' bamboo carts would be sufficient for 15 students.

5. Extension of the Hebbal Farm.—

The Farm at present consists of about 20 acres of dry land and 10 acres of wet land almost all of which is laid out into experimental plots with experiments to extend over several years. To assure the best results, the farm connected with any Agricultural College should contain not less than 100 acres. The land should be as varied as possible so as to allow for the cultivation of a large number of the staple crops. Even the increase of 10 acres of dry land and 10 acres of wet land asked for the Hebbal Farm would be insufficient. But the estimate submitted in this connection may be considered as being sufficient to allow for a beginning. The question of acquiring the whole village site may be gone into later.

6. Excursions.—

It is necessary that the students should be sent out for a period of at least four weeks each year to study local conditions such as the conditions in the Black Cotton Soil of the northern part of the State, which is so different from anything we have here in Bangalore.

Statement of cost during the first year :—

1. Laboratory equipment by fitting up rooms A & B:—

	Rs.
(1) Furniture, laboratory, benches, tables, chairs, etc.	1,200
(2) Extra apparatus, glass ware, gas burners, etc.	200
(3) Gas and water fittings, sinks, etc.	400
(4) Alterations to rooms, piercing walls, etc.	500
Total ...	2,300

2. Increase of Staff :—

		Rs.
1	Assistant in Mycology	70—100
2	Do Botany	70—100
3	Do Entomology	70—100
4	Do Charge of insectary ...	50—75
5	Do Chemistry	70—100
6	Assistant Farm Manager	70—100
	Total cost for the first year ...	400—575

		Rs.
3.	Menial staff and construction of latrines	400
4.	Expansion of Farm, erection of quarters, etc.	15,500
5.	Students' quarters	2,000
	Grand Total for the 1st year ...	25,000

4,800

B. NARAINSAMIENGAR.
18-8-11.

22. Resubmitted to 2nd Councillor.

C. S. BALASUNDARAM IYER.
21-8-11.

23. I think the statement put up is all right. Please send up to the Dewan.

H. V. NANJUNDAYYA.
22-8-11.

24. To Financial Secretary and then to Council. If the project can be put through quickly it can be announced at the Dasara Representative Assembly this year.

T. ANANDA ROW.
23-9-11.

Returned noted.

J. S. CHAKRAVARTI.
24-9-11.

25. In my humble opinion the scheme as proposed will not serve any useful purpose commensurate with the large expenditure involved. The training given will not make either good agricultural scientist or efficient practical cultivators, but will give rise to a class similar to under-graduates and ordinary graduates who will clamour for Government appointments.

26. What is really required is a course in the vernacular on practical agriculture on modern lines for the sons of raiyats. The State should have a department of agriculture which should carry on research in connection with the agricultural problems of the State, but the chief duty of which will be to embody the results of agricultural research and experiments carried on in other parts as far as they are applicable to Mysore in a series of vernacular publications which should be distributed broad cast in all parts of the Province. The education of the rising generation of raiyats should be such as to enable them to comprehend these publications and to benefit by them.

27. A scheme for the instruction of the raiyat class boys should be totally different from the plan now under consideration. The teachers necessary for such a scheme should be got from outside or trained with scholarship in outside agricultural institutions. A second rate institution like the one proposed may not turn out efficient teachers.

J. S. CHAKRAVARTI.
24-9-11.

28. Circulate.

C. S. BALASUNDARAM IYER.
25-9-11.

29. Seen. Will the Secretary please send me this file again just before the meeting after circulation.

H. V. NANJUNDAYYA.
26-9-11.

30. Would it not be desirable to get the benefit of the opinion of the Agricultural Committee on the scheme as now put forward? It should be made clear that we are not training men for Government employment.

K. P. PUTTANNA CHTTY.
27-9-11.

31. To be brought up at Council meeting.

T. ANANDA ROW.
29-9-11.

Note for meeting.

C. S. BALASUNDARAM IYER.
1-10-11.

Submitted to 2nd Councillor.

C. S. BALASUNDARAM IYER.
20-10-11.

Seen by the 2nd Councillor.
T. V. T.
11-12-07.
Seen.

D. DEVARAJ URS.
22-12-11.

32. Extract from the Proceedings of the 274 meeting of the Council of His Highness the Maharaja, held at Bangalore on the 29th February 1912.

II. Subject.

Proposal to start an Agricultural School for Mysore Students.

Opinion of the Council.

The scheme for starting an Agricultural School may be generally approved an a lump sum provision therefor made in the next year's budget. The details ma be further developed.

T. ANANDA ROW,
Dewan of Mysore.

"Extract."
C. S. BALASUNDARAM IYER,
Offg. Secy. to Govt.

Submitted to His Highness.

33. With reference to Mr. R. H. Campbell's D. O. letter No. 3, dated 1st July 1911, about the starting of an Agricultural School, I submit the accompanying D. O. correspondence between Dr. Coleman and Councillor Mr. H. V. Nanjundayya on the subject.

34. The paper marked A* contains a summary of the scheme to start an Agricultural School for Mysore students.

* Para 21 *supra.*

35. The scheme was considered in Council and the Council is of opinion that the proposals may be generally approved, that a lump sum of Rs. 25,000 may be granted for it in the next year's budget and that the details may be further developed. This may be approved.

36. As Dr. Coleman has agreed to stay on for a higher salary than what he now gets, it will be a part of his contract that, in addition to his own duties, he will organize and conduct the proposed institution

T. ANANDA ROW
12-3-12.

Order.

37. Approved.

K. R. W.,
His Highness the Maharaja of Mysore.
15-3-12.

Secretary.
T. A. R.
16-3-12.
H. V. N.
18-3-12.

38. Under-Secretary, Branch I, for early attention — Please let me see draft.

C. S. BALASUNDARAM IYER.
18-3-12.

39. A fair draft of an order is submitted.

P. A. K.
21-3-12.

P. G. D'SOUZA.
22-3-12.

40. Draft may be approved.

C. S. BALASUNDARAM IYER.
25-3-12.

41. I have explained the terms of the draft order to Dr. Coleman who thinks it sufficient. This may be issued.

H. V. NANJUNDAYYA.
30-3-12.

42. Issue.

C. S. BALASUNDARAM IYER.
29-4-12.

Serial No. 1. To Dr. Coleman, Officer in charge of the Agricultural Chemist's office, the Comptroller to Government, Revenue Commissioner in Mysore, other Heads of Departments and Deputy Commissioners of Districts, G. O. No. R. 6368-409, dated 6th May 1912.

Approves of the proposals of Dr. Coleman for starting an Agricultural School at Bangalore and directs that a provision of Rs. 25,000 be made in the budget of 1912-13 for the purpose, and requests Dr. Coleman to submit for approval detailed estimates of expenditure to be incurred out of the above lump sum grant and also a prospectus of the school.

Proceedings of the Government of His Highness the Maharaja of Mysore.

Opening of an Agricultural School at Bangalore.

FILE No. 128 of 1911.

A.—D. O. Letter No. 386, dated Bangalore, 1st November 1910, from Dr. Leslie C. Coleman, to the 2nd Councillor.

I must ask you to pardon me for the long delay in answering your verbal request for a plan of agricultural study that might be suitable for Mysore. I have in the meantime corresponded with all the various Provinces in India with regard to the matter.

2. I presume that the idea is to begin Agricultural education in a modest way. I have therefore drawn up a course of study for two years only. I need hardly say that this is a very short time indeed. In fact I think it would be better to give a three years' course but this would mean a larger staff and greater expense.

3. A course such as outlined would require a fair knowledge of English as one of the conditions of entrance and I think it would probably be wise to restrict entrance to those who have studied up to the Matriculation standard even if they had not passed. I believe also it would be wisest to restrict entrance to those whose fathers possess land and who are therefore likely to make practical use of the training obtained.

4. The following is the course. It is largely based on that in use in Madras, but is, of course, shorter:—

1st year.—

(1) Practical Agriculture.—Actual agricultural operations to be carried out by the students on the farm throughout the year.

(2) Elements of Agriculture.—Elementary lectures to be given during 2nd term.

(3) Elementary Chemistry.—Practical and Theoretical. This is to deal with (*a*) the common elements especially those that enter into the composition of plant and animal tissue, (*b*) organic and inorganic compounds.

(4) Botany.—Elementary study of plant forms leading up to Economic Botany and Mycology.

(5) Zoology.—Elementary study of animal forms leading up to Entomology and Veterinary science.

2nd Year.—

(1) Practical Agriculture.—Each student to manage a plot of land, to perform all operations of preparing soil, sowing, cultivation and harvesting; record of operations, expenses and profits to be kept.

(2) Theoretical Agriculture.—Cultivation of crops with especial reference to those grown in Mysore.

(3) Economic Botany.—Study of the chief economic plants of the State; elements of plant breeding, theoretical and practical.

(4) Mycology.—The diseases of plants in Mysore, their causes and prevention, theoretical and practical.

(5) Entomology.—Insect pests of Mysore—practical work in observing and rearing insects.

(6) Veterinary science.—Breeding and care of cattle, etc., diseases and their prevention.

5. With regard to the staff that would be necessary it would, of course, depend a good deal on the number of students who would attend, but as the work should be throughout as practical as possible and as this means much more careful supervision than simple class room studies it wood not be advisable to put more than 15 students in a single practical class at a time. It must be remembered, too, that the same staff cannot do teaching and research work at the same time so that in order to carry on the both at all satisfactorily, it would be necessary to increase the staff very materially. I should say the following is a very low estimate:—

(1) Agriculturist and two Assistants,

(2) Agricultural Chemist and two Assistants,

(3) Biologist and four Assistants, to attend to Botany, Mycology and Entomology,

(4) Veterinarian.

6. With regard to the possibility of co-ordinating with the Central College in subjects such as Botany, Chemistry, Zoology, etc., I have considered it, but fear, that it would not be

practicable. The training in an Agricultural College must be intimately connected with actual farming operations. This necessitates actual work on the farm each day. Our farm is situated too far from Bangalore to allow of a student doing work in both places on the same day. Needless to say the establishment of an agricultural course would necessitate a decided enlargement of the farm area.

7. One thing which I have not noted in the above outline of studies is the necessity for the students to be sent out for a period of at least four weeks each year to study local conditions. It is for instance necessary for them to learn about conditions in the black cotton soil area of the northern part of the State, which is so different from anything we have here in Bangalore.

8. With regard to the probable expenses of inaugurating and carrying out a scheme of agricultural education such as above outlined, I should be glad to furnish you with a statement should you desire it.

9. In conclusion I may say that I am certainly of the opinion that the beginning of agricultural education in Mysore would be a very sound and important step in advance. As time goes on it will be increasingly difficult to get our students admitted into Agricultural Colleges in other parts of India. The success of the work of the Agricultural Department depends very largely upon the intelligence and interest of the cultivating and landholding population and I believe that this intelligence and interest can be increased in no way better than by training the younger generation in improved agriculture.

10. In connection with the difficulty of getting our students admitted elsewhere I may say that Mr. Couchman, the Director of Agriculture in Madras, evinced his surprise that the Education Department of Mysore should be granting scholarships in Agriculture to be utilized at Coimbatore. He told me that they had to turn away this year about 50 applicants from Madras Presidency candidates and so could hardly be expected to take in candidates from Mysore.

11. Requesting you to pardon me for the delay.

B.—D. O. letter dated Malleswaram, 5th November 1910, from the Second Councillor to Dr. L. C. Coleman.

Thank you very much for the letter about the agricultural education. I think that the programme will do admirably to begin with. We can hardly do with less than what you have outlined, and we need not go higher in the beginning. We may begin in English but it seems to me that we should be able to contrive a method and appliances for imparting the elements in Kannada alone. Perhaps we may have that as a lower Department later on.

2. Before submitting the scheme to the Dewan, I should like to have a definite idea on one or two matters. Where should we locate the school? and what accommodation should be required? How about the teaching staff? I should like to have a talk with you. Where and when can you meet me conveniently?

3. Thanking you again.

C.—D. O. Letter dated (Camp Sulebail), 9th November 1910, from Dr. Leslie C. Coleman, to the Second Councillor.

Your letter of the 5th instant was forwarded from Bangalore and reached me to-day.

2. With regard to agricultural training in the Kanarese language I quite agree with you that it would be very desirable, for, outside of Brahmin landholders, there are of course comparatively few of those directly interested in agriculture who are conversant with English. I suppose this is also more or less true of the rising generation although the various Anglo-Vernacular schools throughout the State must be effecting a gradual change in this regard. It is a very hopeful sign that educated landholders throughout the State are beginning to take an interest in agriculture, and in drawing up the programme, I had, of course, in view the probability that the sons of these men would make up the bulk of the students at any Agricultural College.

3. There are decided difficulties in the way of giving instruction such as that indicated in the programme I submitted, in Kanarese. As far as I am aware no books have yet appeared in Kannada dealing with the elements of Chemistry, Botany or Zoology. There are however elementary ones in Agriculture and I think I have examined pretty well all of them and must say that they seem to be rather unsatisfactory even as a guide to a teacher. I have not examined the book on Veterinary Science by Mr. Narasimha Iyengar and so cannot speak with regard to it.

4. I think you will agree with me that in order to present such subjects as Chemistry, Botany and Zoology to the students in Kanarese, the instructors would have to be men of very extraordinary ability and patience as they would have to do the work without any guiding books in the language to help them. As you know, I am making it a point to have all publications of this department and all descriptions and charts used in connection with our exhibits printed in Kanarese as well as English. The difficulties in so doing have been very great and the results have been more than once anything but satisfactory. It often comes to the use of some Sanskrit word or the mere writing of the English word in Kanarese characters. Freshly coined words to express the ideas are also rather hopeless if they are not directly confusing.

5. I think, therefore, as regards training in Kanarese, it would have to be restricted almost entirely to practical Agricultural operations. In fact I made a suggestion in this connection to the Dewan some time ago. I think it quite possible that really useful practical instruction could be given to the sons of raiyats and of small landholders who do not know English in such points as the following:—(*a*) The uses of cultivation in preserving soil moisture, (*b*) the methods of preserving cattle manure, (*c*) the uses of green manure crops, (*d*) the importance of seed selection, (*e*) the cultivation of sugar-cane and the manufacture of jaggory and sugar, (*f*) some simple facts with regard to diseases and pests, (*g*) the care and improvement of cattle.

6. As far as I am aware the only place where such a course of training in the vernacular has been tried at all extensively is in the Central Provinces and as it has been in progress little over a year I imagine, it is too early to know the results. It is being tried there in connection with one of the Experimental Farms (the one at Raipur) and not at the Agricultural College. I shall write for information as to its working and shall let you know later on.

7. Now as to the question of location, it is, I must say, a rather difficult one. Unfortunately both laboratories and Experimental Farm at Bangalore were planned for the one purpose of experimental work. On the one side even if accommodation could be found for say fifty students in the laboratories at present in use, something which I do not think at all possible if any experimental work is to be done at all, the fact that they are situated about five miles from the farm would make it practically impossible for the students to go from one to the other. On the other hand the farm at present consists of about twenty acres dry and ten acres wet land almost all of which is laid out into experimental plots with experiments to extend over several years going on upon them. For fifty students I should think about fifty acres in addition would be necessary (say 25 dry and 25 wet). The wet land might be acquired close to our wet area but the dry land would be a difficult matter. Hardly ten acres of decent land are available up above the present dry area; on one of the other three sides is the tank, on another is the village and on the fourth is the grass land which is under the control of the Imperial Military Authorities and which has, I believe, been given over to them by the Mysore Government for a term of years. Moreover it is in the line of fire from the rifle ranges. On the opposite side of the tank is a large mango orchard and rubber plantation owned, I believe, by a Mr. Garrett.

8. In addition to the land for actual use there would have to be Students' quarters and a College building (?). In fact the whole matter would need a good deal of consideration and it would probably be better for me to discuss the matter with you in person.

9. I have, in the above, supposed that the College would be situated at Bangalore with the idea of utilising the services of the present staff in connection with teaching. In this connection I am of course leaving out of account all personal considerations. It is, I think, probable that it would not affect me in any case. So I can leave that out of consideration. I believe, however, that teaching should *not* be left wholly to subordinate or Junior members of the staff.

10. As far as I am aware, in all the Agricultural Colleges in India the heads of the various different divisions are required to do a certain amount of actual teaching and I believe it is a sound policy. A man should know very much more about his subject than that which he is required to impart and the more he knows the better.

11. When the two men who are now in England return we will have a man trained in Agricultural Chemistry and one trained in Agriculture; and in case a College were started these men should certainly have to do some of the teaching. As to the Biological side I am not prepared to say much owing, partly at least, to the uncertain tenure of my own office. For the teaching in Veterinary Science I think it might be possible to get the services (it would be only for say an hour a day or less) of one of the two Chief Veterinary Officers in the service of the State, Mr. Simpson or Mr. Narasimha Iyengar.

12. If I remember rightly I gave you in my former letter an estimate of the increase in Assistants that would be necessary. This was of course with a view to using some of them at least as instructors.

13. I fear I cannot give you any more definite information at present. I am so much in the dark as to what Government really intends to do in connection with the Agricultural Department which is, of course, at present not a Department that I am unable to say anything more definite. The utilization of the services of officers of the department as instructors would have to be considered along with their utilization in investigation work and demonstration work throughout the State and it is on this point that I am at present entirely in the dark as to Government's plans, if any, have as yet been formulated.

14. I am returning to Bangalore on the 3rd of December and should be very glad to call on you any time after that date that would be convenient to you to discuss the matter further.

D.—D. O. Letter No. 567, dated Bangalore, 29th December 1910, from Dr. L. C. Coleman, to the 2nd Councillor.

I send herewith a rough estimate of the probable cost of starting an Agricultural College and maintaining it for the first year. I also enclose a plan of the building indicating where the students may be accommodated.

2. First of all it is clear that the laboratories for students must be kept quite separate from those for analytical and research work. It would never do to allow a lot of dusty students to track through a room where accurate analytical work is being done. I therefore propose the following arrangement.

3. The room marked A (which is now used as an Assay room) in the plan is to be made into a chemical laboratory. The assaying furnaces are to be moved into the preparation room immediately behind the Assay room. Across one end of the preparation room is to be placed a board partition separating off a hall-way which will allow for entrance from the outside into the room A as well as into the preparation room.

4. Room B now a store room is to be turned into a combined lecture hall and botanical and zoological laboratory. The work benches will be placed close to the windows around the room and the centre of the room can be used as lecture hall. This is, of course, possible only as long as we have one class doing one thing at a time. Rooms A and B are to be connected by a door at (*a*).

5. The room A will accommodate about nineteen or twenty students, the room B only about 15 because of the small amount of window space. Even at that I am allowing for three men working at each window. Piercing the wall to make another window would allow for a couple more workers.

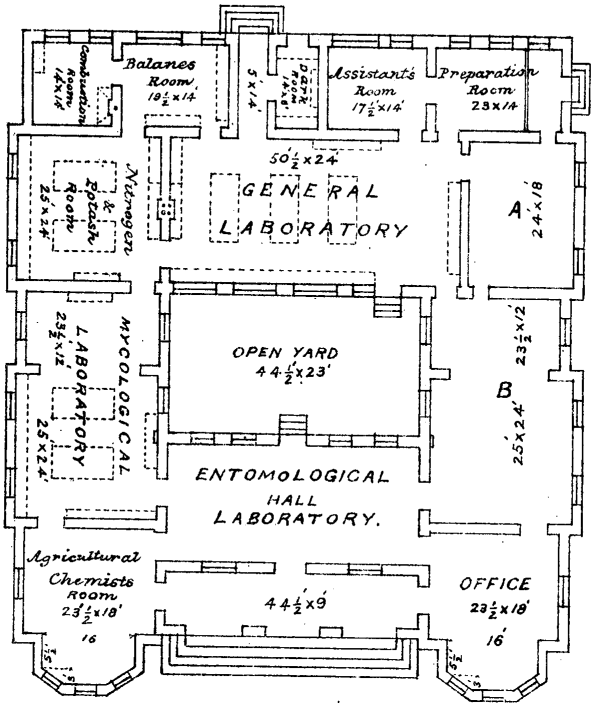
6. The above proposed arrangement would ensure two things. First, the new laboratories and lecture room could be kept quite separate from the present laboratories. Second, there would be no additional building required. The stores will, of course, be moved to one of the rooms in the out-building.

7. The cost of fitting up the rooms will be approximately as follows:—

		Rs.
1.	Furniture, laboratory benches, tables, chairs, etc. ...	1,200
2.	Extra apparatus, glass ware, gasburners, etc. ...	200
3.	Gas and water fittings, sinks, etc.	400
4.	Alterations to rooms, piercing walls, etc.	500
	Total Rupees ...	2,300

8. The increase of staff which I consider necessary is as follows:—

	Rs.
Assistant in Mycology 70—100	840
,, ,, Botany 70—100	840
,, ,, Entomology 70—100	840
,, ,, Charge of Insectary 50—75	600
,, ,, Chemistry 70—100	840
,, Farm Manager 70—100	600
Total Rupees ...	4,560



GROUND PLAN

OF

THE LABORATORY & OFFICE OF

THE DEPARTMENT OF AGRICULTURE

9. In estimating this increase in staff I have considered also the growing needs of the department along the lines of investigation and demonstration and I have taken into account also the fact that the increased demands on my own time will make absolutely necessary an increase in the staff of Assistants. The proposed increase will moreover ensure the presence of an Assistant in each branch permanently at head quarters to look after long continued experiments which at present simply cannot be carried on as both myself and Assistants have to spend a great part of the year on tour.

10. The total estimated expenditure is therefore Rs. 6,860 or roughly Rs. 6,900. Of this Rs. 4,560 is recurring and allows for an increrse to Rs. 6,600.

11. I have not given any estimate for increase to menial staff nor for the construction of more extensive latrines. We might place this at about Rs. 400 making the total estimate for the first year about Rs. 7,300.

12. Now with regard to the necessary expenditure on the Farm, estimates have already been placed in the hands of Government (*vide* my letter No. 457 of the 10th January 1910). With regard to these estimates it must be noted that the estimated cost of acquiring the land appears to have been too low as I understand the estimate made by the Deputy Commissioner, Bangalore District, is considerably higher. On this point, however, I have no definite information but it must be available to you.

13. If the proposals as contained in my letter be carried out I think it would be necessary to increase them only slightly on account of the students. I need hardly point out that the acquisition of land is an absolutely essential step as without it no practical training could be given.

14. The question of quarters nas still to be considered and I must confess that it presents some difficulty for the reason that it is difficult to say just where the students could be best accommodated. If the Manager of the Farm were provided with quarters the cooly lines he is at present using as a dwelling could be utilized temporarily as quarters for students. Hebbal is anything but an ideal place for students to live in and I fear the opportunity for recreation would be very limited. Whatever arrangement is made some sort of tiffin room would have to be erected for them either at the Farm or near the laboratory.

15. I am inclined to think that the best arrangement would be to have the students quartered on the Farm and come three days of the week to Bangalore for practical work in Chemistry, Botany and Zoology and for lectures. Thus on the days on which they have actual manual labour to perform they would have no tiring journey to make. In any case I think some kind of transport could be arranged for them on days when they have to come in. I may say that this is a very common arrangement in rural districts in the United States and Canada. Three pairs of bullocks and three of Colonel Jones' bamboo carts would be quite sufficient for fifteen students. Transport ponies would of course be better.

16. It is possible that some better arrangements may be devised after I have seen the Agricultural Colleges in other parts but in any case I think it would be wise to provide Rs. 2,000 for students' quarters.

To sum up we have as follows:—

	Rs.
Laboratory equipment	2,300
Increase of staff including menials	4,960
Expansion of Farm, erection of quarters, etc., as per my letter No. 457 of the 10th January	15,500
Students' quarters	2,000
	24,760
or Total Rupees to round	25,000

After the first year further additions would have to be made but I presume there is no necessity to consider them just now.

17. In conclusion I should like to point out that it would be highly advisable to start the work earlier than July 1st, 1911, from the fact that many of the cultivating operations are begun in May or June. It is, I believe, a general custom to give the students a vacation in January — February or February — March and thus to begin the new term in March or April. Such an early start would, I fear, be impracticable but I believe that we might get ready for the opening in June provided Government is able to take early steps in the matter. I hope to have finished visiting the Agricultural Colleges by the end of January and shall be prepared to present a report to you immediately on my return to Bangalore.

Opening of an Agricultural School at Bangalore.

E.—D. O. Letter No. 838, dated Bangalore, 16th March 1911, from Dr. Coleman, to the 2nd Councillor.

The following are some of the points I have noted during my visit to the various Agricultural Colleges and which I think may be kept in mind when formulating a scheme of agricultural education for the State of Mysore.

As you are aware I visited in all, four Agricultural Colleges, *viz.*, Poona, Nagapur, Cawnpore and Coimbatore and what remark I have to make will be made under the head of the different institutions.

1. *Poona*—The requirements for entrance to the regular course at Poona is higher than that of any other Agricultural College in India, the standard for entrance being the Intermediate Examination or its equivalent. The reason for this high standard appears to be the fact that the graduates largely enter the service of Government in the Revenue Department and thus are required to undergo a course which may be equivalent to that required for a University (B. A.) degree. This regular course, it appears, is not at all intended to train up sons of cultivators and landholders for working or managing their own lands.

To fill this need there have been established :—

A. A short one year's course (teaching in English) for the sons of landlords which is intended to be largely practical. The outline of studies kindly furnished to me is however a most formidable one embracing General Plant Study, Detailed Plant Physiology, Horticulture, Chemistry, Study of Soils and Climatology; Tillage and Implements, Manures and Manuring, Irrigation and Pumps, Cropping, Plant Diseases, Insect Pests, Cattle Management, Dairying, Animal Diseases and Farm Management. It seems to me impossible to impart more than the merest smattering of these various subjects in one year and to my mind such limited training is likely to prove worse than useless as it will give a man just enough knowledge to make him think he knows something about the subject and this is likely to lead him into all sorts of foolish errors.

B. A course in the vernacular for sons of *bonâ fide* cultivators from thirteen to eighteen years of age. This is to be a combination of ordinary school work with training in Nature Study and Agriculture or rather it is ordinary educational training applied to agricultural needs. To give an example :—Arithmetic is to be taught but continually with a utilitarian end in view, the time being chiefly devoted to computations connected with money, weights, and measures, values of given quantities of articles, measurement of fields, regular and irregular excavations and masonry work. This last is to be carried out on an actual business scale. Other subjects will be Geography and Physiography, Nature Study, Sanitation and Hygiene, Citizenship (knowledge of local Governments, co-operative credit, etc.), reading and writing (subjects to deal with agriculture) and agriculture itself which will be for the most part taught in the field.

This course appeals to me as a very important attempt to correlate education with agricultural training and one the success of which should have a very marked effect upon rural education throughout India.

Both of these special courses are comparatively new, course B, having been started in 1910. It is then too soon to form an estimate of the results that will accrue from them.

With regard to the buildings at Poona they are commodious and on the whole suitable though rather elaborate. Their cost must have been about three lakhs if not more. In one respect the College is not favourably situated in that the Farm contains only one type of soil. This is a distinct drawback for methods of cultivation that may be suitable for one type of soil may be quite unsuitable for another. There is no wet area nor is there any red soil on the Farm. They have, however, a large Dairy herd and there is every facility for practical work in Dairying and the Study and Treatment of Cattle Diseases.

Much of the actual teaching is done by the heads of the departments in the College and there is no doubt that this ensures a thoroughness which would otherwise be lacking.

II. *Nagpur.*—At Nagpur they are still labouring under the difficulty of having to do work in temporary quarters. The Agricultural College is at present housed in one wing of the Victoria Jubilee Institute and has been there ever since the new scheme of Agricultural Education was started. Notwithstanding this the training being given is undoubtedly good.

There are about 60—80 students. Students are not admitted unless they have passed the Matriculation Examination. In addition candidates are required to undergo a physical test consisting of about four hours' hard work. The Principal stated in conversation that he believed a much better entrance test would be an examination to test the candidate's knowledge of English.

The temporary laboratories are very poor but new laboratories at a cost of between one and two lakhs are being constructed. The students' quarters are commodious and comfortable. In connection with the teaching of Botany a small garden illustrating the various different plant families has been started close to the students' quarters.

The farm connected with the College is fairly large between 200 and 300 acres and has the great disadvantage already noted at Poona of having no wet area. All work on wet land has to be done at the Telinkere Farm some three miles away and is thus practically restricted to training in transplanting paddy. There is as yet no dairy but one is to be started.

During the first year students help in the general operations on the farm ; during the second year each cultivates half an acre with his own hands performing all the operations ; during the third year each student manages one-tenth of an acre indenting for his own labour, manure, etc., and disposing of the produce to the farm at the end of the year. A balance sheet has to be submitted showing expenses itemized and returns. I may say this is the general plan followed in all the Agricultural Colleges, *i.e.*, in the first year students familiarise themselves with the various agricultural operations, in the second year they actually cultivate a given amount of land while in the third year they manage a piece having to hire their labour, buy their manure, etc.

In addition to the land already mentioned each student of the third year is given a small plot of garden land for training in gardening.

Another point worthy of mention is the growing of so called "Observation plots" for the students. These show the staple crops in all their principal varieties. The students have to familiarise themselves with these and to make notes on their growth, their comparative development at different stages, etc. A somewhat similar system is followed at Poona.

Here as in most of the Colleges visited few, if any, of the students have actually gone back to their own land after graduation as they have up to the present been absorbed by the agricultural and other departments of Government. The Principal stated however that about seven of this year's graduating class have expressed their intention of working their own land.

In addition to the above a one year's practical course for Malguzars has been in operation for some years but it has, in the opinion of those directly concerned with it, proved a failure and proposals have been made for its abandonment. It has been found that the training that can be given in one year was insufficient and the results obtained have been unsatisfactory.

III. *Cawnpur.*—Here again the College has up to the present been housed in temporary quarters. The new building costing between five and six lakhs is the most beautiful Agricultural College building in India and appears to me unnecessarily elaborate. The old laboratories are housed in an old bungalow while a separate building is used as combined lecture hall.

Here as at Nagpur Matriculation is a condition of entrance. However in addition to the regular students there are the so called Kanungo students. These are men chosen from the various districts for revenue posts and who are required first to undergo a training in Agriculture.

There is at present under consideration a plan of affiliating the College with the Allahabad University in which case, of course, two distinct courses will have to be given, one for Kanungo students and one for students going up for an Agricultural degree.

The Farm contains land of practically only one type, no wet area being attached. The students when I was there were growing wheat and this usually alternates with some pulse crop such as Arhar (Togari). A small dairy has been constructed in connection with the College.

To me the training seems to be suffering greatly from a lack of personal supervision by the specialists at the head. As far as I could ascertain none of the specialists do any teaching which is thus all left to subordinates. This no doubt increases the opportunities for research work and research work of great value is being done. I am, however, speaking now from the point of view of the College alone and from this point of view the handing over of the teaching to assistants is likely to give anything but the best results.

Here as in the colleges previously visited practically all, if not all, of the graduating students find employment under Government either in the Agricultural or in some other department.

IV. *Coimbatore.*—My trip to Coimbatore had to be delayed on account of the fact that the Principal was away on tour with the third year students and I did not wish to visit the College during his absence.

Undoubtedly the conditions at Coimbatore and the class of students at Coimbatore to be dealt with are more nearly allied to those in Mysore than are those of any of the other places visited.

The College building is very commodious but has been made so in order to give ample room for research laboratories. This is more or less the case with all the new Agricultural College buildings, the actual accommodation for teaching taking up hardly half of the total space.

Practical work in agriculture is carried on much on the same lines as at Nagpur except that in the third year individual plots are not given to the students for management. Instead of that the class, under plans just devised, is divided up into sections. These sections are alternated on different parts of the Farm to be in charge of the operations there. The individual members of the sections have in turn the responsibility of directing operations for a period of about two weeks each. This arrangement works out as follows:—one section is put on in charge of the cattle and is supposed to direct the feeding and care of them for a certain length of time, others are to be placed in charge of the cultivation of cotton, others on sugar cane, etc. The Coimbatore College is particularly well suited for this kind of training in that the Farm is very large (about 400 acres) and the soil very varied allowing of the cultivation of very many kind of crops. In the first year students undergo training in general agricultural operations while in the second year each is given about one half acre of land to cultivate and manage. He however is allowed to indent for labour and must prepare a balance sheet showing the results at the end of the season. Thus the agricultural operations of the second year are much like those of the third year at Nagpur.

A dairy is in the course of construction and is looked upon by the Principal as a very necessary adjunct to the College. I may say it is a very general opinion that an agricultural course would be decidedly incomplete without a course in Dairying. The Principal at Coimbatore considers this industry as a promising one in that neighbourhood and it is certain that great improvements could be made in that direction in Mysore also.

The student's accommodation is very good. Students are housed in blocks of six rooms. Each student has a separate room (about 14 feet × 12 feet) and is provided with table and chair. Behind each block is the dining room for that block and behind this again the kitchen. Off at the side are a bath room and latrine. I may say that in every College visited the accommodation was very good. The rooms were well ventilated and the furnishings though plain were substantial and sufficient. In Coimbatore Government supplies only a table and chair, the students have to supply cot and lamp. In the other Colleges both cot and lamp are supplied. In all cases either shelves or almirahs were supplied for the keeping of books, etc.

In the above notes I have given simply an outline of the work being done largely from the practical standpoint. I have made little mention of the work in Biology and Chemistry as the work in these branches must of necessity be very similar in the different Colleges. I might note here however that in Coimbatore all this scientific training is given in the first and second years, the final year being devoted to agriculture in its various branches.

In Coimbatore the first graduating class goes out this year so it is much too early to say just how the graduates will utilize the training acquired. The Principal, however, informed me that a number of the best men in the graduating class have expressed their intention of managing their own lands and do not desire to enter the Government service.

Certain conclusions can, I think, be based upon the observations made:—

(*a*) To assure the best results, the Farm connected with any Agricultural College started here should contain not less than one hundred acres and it would probably be better if it could contain more. This land should be as varied as possible so as to allow for the cultivation of a large number of the staple crops. The Hebbal Farm at present is entirely inadequate nor would the increase of ten acres wet land and ten acres dry land asked for sometime ago, at all suffice. The establishment of an Agricultural College at Hebbal would be possible either if the village site and the dry and wet and garden land be taken over or possibly if the dry land on the opposite side of the wet area together with the wet area directly beneath the tank be taken over leaving the village site, etc.

While the second alternative would in some ways be the better it might happen that the villagers if they were forced to give up their lands in the wet area, might wish to relinquish all their lands.

I send herewith a survey map showing approximately the areas that should be included in the Farm.

(*b*) If the College is intended primarily to train the sons of landholders to work their own lands and not to train men for Government service, the entrance requirements should be placed as low as possible, a fairly good knowledge of English would be essential and therefore the requirements should be somewhat between the Matriculation and the Lower Secondary standard.

(*c*) It appears doubtful if a two years' course would be sufficient, as stated, to reach as many of those connected with agriculture as possible the standard for entrance should be low. This would however result in very slow progress in the first year, as the student would undoubtedly take considerable time in adapting himself and in learning to grasp somewhat complicated subjects presented in a language not his own. For the sake of saving a small sum of money, it would, I believe, be unwise to run the risk of giving the students a training insufficiently thorough which might prove a hindrance rather than an aid to agricultural progress in Mysore. In making my former suggestion that a two years' course should be started, I did not consider sufficiently the fact that the class of students we want will, in many cases, be undoubtedly backward and will therefore grasp things more slowly than do the average Matriculates who enter our College.

(*d*) A course in the vernacular for the sons of raiyats, etc., is something which should be kept in view. To make such a course a success it would be necessary to have men particularly suited to the work as instructors, otherwise it would almost certainly prove a dismal failure. It would in my opinion be wise to postpone such an undertaking for a few years until a proper agricultural course can be organized and we can train some men here. From these men it may then be possible to choose instructors who will be fitted to carry out such work. In the meantime proper elementary text books in the vernacular might be prepared. It is in fact a subject which requires careful planning and preparation in order to ensure success.

(*e*) Any other training in the vernacular must have to do with training in special operations, such as ploughing with an improved plough, transplanting paddy, cultivating sugar cane growth and use of green manures. This can also be carried out on the Farm and is in fact already being carried out in a small way.

(*f*) In any permanent arrangement it would, I believe, be necessary to have a College building and students' quarters erected on the Farm. As a temporary measure, however, the following plan could be tried. All training and lecturing in Botany, Zoology and Chemistry can be done in our present building according to the plan already submitted to you. This work should be confined to three days in the week during the first year. The students should be quartered at the Farm and should receive all agricultural training there. The lectures in agriculture can be given in the room now used by the Farm Manager as an office. This room can be easily fitted up a temporary lecture room. Arrangements would have to be made with regard to housing the students and providing for cooking and messing accommodations. Also some sort of conveyance would have to be provided to bring the students in to Bangalore on alternate days.

My former estimate would, I believe, be sufficient to allow for a beginning. The question of acquiring the whole village site would have to be gone into later.

(*g*) In connection with the scheme for an agricultural education a general scheme for the organization of the department should be taken up. At present we have no proper department as I am frequently reminded. A considerable increase of the staff would of necessity have to be planned for. I have already indicated to you what, in my opinion, would be about the minimum at the beginning. As the teaching increases, however, less and less time would be allowed for demonstration and research work unless the staff were materially increased, so it seems to me that when considering the question of staff for teaching, Government should also draw up some plan for a progressive increase in the staff of the department as a whole. This is, I believe, what has been done universally in the various provinces and presidencies and everywhere I have been agricultural officials have told me of an establishment which is gradually being filled up as the men become available and the needs of the department increase.

Any further available information which you desire I shall be glad to furnish. I trust you will pardon the delay in submitting this report. It has been due to a week's indisposition.

Opening of an Agricultural School at Bangalore.

READ—

Correspondence ending with letter No. 838, dated 16th March 1911, from Dr. Coleman, officer in charge of the Agricultural Chemist's Office, submitting proposals for opening an Agricultural School at Bangalore, the following being a summary of the scheme :— **Serial No. 1.**

1. *Entrance qualifications.*—As the school will be intended primarily to train sons of landholders to work their own land and not to train men for Government service, candidates who have studied between the Matriculation and Lower Secondary standards and possess a fairly good knowledge of English may be admitted.

2. *Course.*—For the present a two years' course would be sufficient, the subjects taught being distributed as follow :—

FIRST YEAR.

(1) *Practical Agriculture.*—Actual agricultural operations to be carried out by the students on the Farm throughout the year.

(2) *Elements of Agriculture.*—Elementary lectures to be given during the 2nd term.

(3) *Elementary Chemistry.*—Practical and theoretical—dealing with (*a*) the common elements especially those that enter into the composition of plants and animal tissue, (*b*) organic and inorganic compounds.

(4) *Botany.*—Elementary study of plant forms leading up to Economic Botany and Mycology.

(5) *Zoology.*—Elementary study of animal forms leading up to Entomology and Veterinary science.

SECOND YEAR.

(1) *Practical Agriculture.*—Each student to manage a plot of land, perform all operations of preparing soil, sowing, cultivation and harvesting ; record of operations, expenses and profits to be kept.

(2) *Theoretical Agriculture.*—Cultivation of crops with a special reference to those grown in Mysore.

(3) *Economic Botany.*—Study of the chief economic plants of the State, elements of plant-breeding, theoretical and practical.

(4) *Mycology.*—The diseases of plants in Mysore, their causes and prevention, theoretical and practical.

(5) *Entomology.*—Insect pets of Mysore—Practical work in observing and rearing insects.

(6) *Veterinary Science.*—Breeding and care of cattle, etc., diseases and their prevention.

The two years' course may have to be extended in some cases as the entrance qualifications proposed are low and the progress of the student would necessarily be slow in the first year as he would take considerable time to grasp complicated subjects presented in a language not his own.

It is necessary to have a separate course in the vernacular for the sons of raiyats. This may be started later on after a proper agricultural course is organized when it will be possible to get suitable men as instructors out of the men trained in the school, proper elementary text books in the vernacular being prepared in the meantime.

3. *Teaching staff and establishment required.*—The teaching should not be left wholly to subordinate or junior members of the staff and on the return of the two officers who were selected for training in agriculture and Agricultural Chemistry in England and Germany, their services will be utilized for a part of the teaching work.

For the teaching in Veterinary Science, the services of Mr. Simpson or Mr. Narasimha Iyengar should be made available for one hour a day or less. Some Assistants would also be necessary as instructors so that both teaching and research work may be carried on satisfactorily at the same time. The increase in the staff that will be necessary is as follows :—

(1) Assistant in Mycology.
(2) Do Botany.
(3) Do Entomology.
(4) Do charge of Insectary.
(5) Do Chemistry.
(6) Assistant Farm Manager.

The above increase in the staff will, in addition, ensure the presence of an Assistant in each branch permanently at headquarters to look after long continued experiments which at present cannot be carried out as both Dr. Coleman and his Assistant heve to spend a great part of the year on tours.

The menial staff also requires strengthening.

4. *School building and students' quarters.*—As a temporary measure the following plan is proposed. All training and lecturing in Botany, Zoology and Chemistry can be done in the present Agricultural Chemist's Office building. The two rooms which are at present being used as Assay and Store rooms may by suitable adjustments be converted into a Chemical Laboratory and a combined lecture hall and Botanical and Zoological Laboratory. These rooms will accommodate from 15 to 20 students. The lecture and work in the laboratory should be confined to three days in the week during the first year. The students should be quartered at the Farm and should receive all agricultural training there. The lectures in agriculture can be given in the room now used by the Farm Manager as an office, which can be easily fitted up for the purpose. Arrangements have to be made with regard to housing the students and providing for their cooking and mess. If the Manager of the Farm were provided with quarters, the cooly lines he is at present using as a dwelling could be utilized temporarily as quarters for students. A tiffin room has also to be erected either at the Farm or at the Laboratory. On the days on which the pupils have actual manual labour to perform they should have no tiring journey to make. Some sort of transport has also to be provided for the students on the days on which they have to come to the Laboratory for practical work. Three pairs of bullocks and three of Col. Jones' bamboo carts would be sufficient for 15 students.

5. *Extension of the Hebbal Farm.*—The Farm at present consists of about 20 acres of dry and 10 acress of wet land almost all of which is laid out into experimental plots with experiments to extend over several years. To assure the best results the Farm connected with any Agricultural College should contain not less than 100 acres. The land should be as varied as possible so as to allow for the cultivation of a large number of staple crops. Even the increase of 10 acres of dry and 10 acress of wet land already proposed will not be sufficient, but it will serve as a beginning and the question of acquiring the whole village site may be gone into later.

6. *Excursions.*—It is necessary that the students should be sent out for a period of at least four weeks each year to study local conditions in the black cotton soil of the northern part of the State which has distinct characteristics.

7. *Cost of establishing the school during the first year.*—

(1) *Laboratory equipment.*—

	Rs.
(i) Furniture, Laboratory benches, tables, chairs, etc.	1,200
(ii) Extra apparatus, glassware, gas burners, etc.	200
(iii) Gas and water fittings, sinks, etc.	400
(iv) Alterations to rooms	500
Total ...	2,300

(2) *Increase of staff.*—

	Rs.	
(i) Assistant in Mycology on	... 70—100	
(ii) Do Botany on ...	... 70—100	
(iii) Do Entomolgy on	... 70—100	
(iv) Assistant in charge of Insectary on ...	... 50— 75	
(v) Assistant in Chemistry on ...	... 70—100	
(vi) Assistant Farm Manager on ...	... 70—100	
Total cost for first year ...	4,800	
(3) Menial staff and construction of latrines... ...	...	400
(4) Expansion of Farm, and erection of latrines ...	...	15,500
(5) Students' quarters	...	2,000
Grand Total for the first year ...		25,000

No. R. 6368-409—Agri. 128-11-1, dated Bangalore, 6th May 1912.

ORDER THEREON.—Government have had under consideration for some time the question of providing for agricultural education in Mysore and have considered the scheme submitted by Dr. Coleman at their request.

2. Government generally approve of the proposals submitted by Dr. Coleman as indicated in the outline given in the preamble and are pleased to direct that a lumpsum provision of Rs. 25,000 be made in the budget of 1912-13 for starting the school.

3. It will be a part of Dr. Coleman's duties in the Agricultural Department to organize and conduct the institution.

4. Mr. Narasimha Iyengar, Superintendent, Veterinary Department, has already been directed to give instruction in veterinary subjects in the school in Government Order No R. 1925-7--Agri. 129-10-2, dated 6th October 1911.

5. Dr. Coleman is requested to submit for the approval of Government at an early date detailed estimates of expenditure to be incurred out of the above lumpsum grant and also a prospectus of the school giving full information regarding the details of the training to be given therein.

C. S. BALASUNDARAM IYER,
Offg. Secy. to Govt., Gen. & Rev. Depts.

To—Dr. L. C. Coleman, M.A., P.H.D., Officer in charge of the Agricultural Chemist's Office,
The Comptroller, Mysore Government.
The Revenue Commissioner in Mysore.
The other Heads of Departments.
The Deputy Commissioners of Districts.

Exd.—C. V.